

Converting Units

Dimensional Analysis

Task Cards

WITH OR WITHOUT
QR CODES!



TEACHER Tips

- Print, laminate and cut out task cards.
- Use task cards at centers, stations, individually or in groups or for activities like “scoot” and other similar activities. You can also print multiple sets and use as question cards with games. Task cards are versatile. They can be used as part of your daily routine, as enrichment, with games, or even as homework.
- To play “scoot”, place one task card on each desk that a student will be sitting at. Give each student a recording sheet to write down their answers. Students answer questions and after a set time (a minute or so for these cards) the teacher says “scoot” and the students move to the next desk and answer the question there.

1. A jar of mayonnaise contains 32 oz. How would you convert this measure to cups using a conversion factor?

a. $\frac{32\text{oz}}{1} \cdot \frac{8\text{oz}}{1\text{cup}}$

b. $\frac{32\text{oz}}{1} \cdot \frac{1\text{cup}}{8\text{oz}}$



2. A person's height is 73 inches. How would you convert this height to feet using a conversion factor?

a. $\frac{73\text{in}}{1} \cdot \frac{12\text{in}}{1\text{ft}}$

b. $\frac{73\text{in}}{1} \cdot \frac{1\text{ft}}{12\text{in}}$



3. A snake travels 4 inches per second. How would you convert this speed to feet per minute using conversion factors?

a. $\frac{4\text{in}}{s} \cdot \frac{60s}{1\text{min}} \cdot \frac{12\text{in}}{1\text{ft}}$

b. $\frac{4\text{in}}{s} \cdot \frac{1\text{min}}{60s} \cdot \frac{1\text{ft}}{12\text{in}}$

c. $\frac{4\text{in}}{s} \cdot \frac{60s}{1\text{min}} \cdot \frac{1\text{ft}}{12\text{in}}$



4. A pump dispenses 15 gallons of water per minute. How would you convert this rate to quarts per second using conversion factors?

a. $\frac{15\text{gal}}{1\text{min}} \cdot \frac{60s}{1\text{min}} \cdot \frac{4\text{qts}}{1\text{gal}}$

b. $\frac{15\text{gal}}{1\text{min}} \cdot \frac{1\text{min}}{60s} \cdot \frac{4\text{qts}}{1\text{gal}}$

c. $\frac{15\text{gal}}{1\text{min}} \cdot \frac{1\text{min}}{60s} \cdot \frac{1\text{gal}}{4\text{qts}}$



5. Amy can drink 4 cups of milk in 15 minutes. How would you convert this rate to ounces per hour?

a. $\frac{4\text{cups}}{15\text{min}} \cdot \frac{60\text{min}}{1\text{hour}} \cdot \frac{8\text{oz}}{1\text{cup}}$

b. $\frac{4\text{cups}}{15\text{min}} \cdot \frac{1\text{hour}}{60\text{min}} \cdot \frac{8\text{oz}}{1\text{cup}}$

c. $\frac{4\text{cups}}{15\text{min}} \cdot \frac{1\text{hour}}{60\text{min}} \cdot \frac{1\text{cup}}{8\text{oz}}$



6. A bucket contains 5.6 liters of water. How would you convert this measure to gallons of water?

a. $\frac{5.6\text{L}}{1} \cdot \frac{1\text{L}}{1.06\text{qts}} \cdot \frac{4\text{qts}}{1\text{gal}}$

b. $\frac{5.6\text{L}}{1} \cdot \frac{1.06\text{qts}}{1\text{L}} \cdot \frac{4\text{qts}}{1\text{gal}}$

c. $\frac{5.6\text{L}}{1} \cdot \frac{1.06\text{qts}}{1\text{L}} \cdot \frac{1\text{gal}}{4\text{qts}}$



7. A gallon of gas costs \$3.54. How would you convert this price to pints per cent?

a. $\frac{1\text{gal}}{\$3.54} \cdot \frac{\$1.00}{100\text{cents}} \cdot \frac{4\text{qrts}}{1\text{gal}} \cdot \frac{2\text{pints}}{1\text{qrt}}$

b. $\frac{1\text{gal}}{\$3.54} \cdot \frac{\$1.00}{100\text{cents}} \cdot \frac{4\text{qrts}}{1\text{gal}} \cdot \frac{1\text{qrt}}{2\text{pints}}$

c. $\frac{1\text{gal}}{\$3.54} \cdot \frac{100\text{cents}}{\$1.00} \cdot \frac{4\text{qrts}}{1\text{gal}} \cdot \frac{1\text{qrt}}{2\text{pints}}$

d. $\frac{1\text{gal}}{\$3.54} \cdot \frac{100\text{cents}}{\$1.00} \cdot \frac{1\text{gal}}{4\text{qrts}} \cdot \frac{1\text{qrt}}{2\text{pints}}$



8. A sloth travels 0.15 miles per hour. How would you convert this speed to feet per second?

a. $\frac{0.15\text{mi}}{1\text{hr}} \cdot \frac{1\text{hr}}{60\text{min}} \cdot \frac{60\text{s}}{1\text{min}} \cdot \frac{5280\text{ft}}{1\text{mi}}$

b. $\frac{0.15\text{mi}}{1\text{hr}} \cdot \frac{60\text{min}}{1\text{hr}} \cdot \frac{1\text{min}}{60\text{s}} \cdot \frac{5280\text{ft}}{1\text{mi}}$

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9. A cheetah runs 300 feet in 2.92 seconds. How would you convert the cheetah's speed to miles per hour?

- a. $\frac{300ft}{2.92s} \cdot \frac{1mi}{5280ft} \cdot \frac{60s}{1min} \cdot \frac{60min}{1hr}$
- b. $\frac{300ft}{2.92s} \cdot \frac{5280ft}{1mi} \cdot \frac{60s}{1min} \cdot \frac{60min}{1hr}$
- c. $\frac{300ft}{2.92s} \cdot \frac{1mi}{5280ft} \cdot \frac{1min}{60s} \cdot \frac{60min}{1hr}$
- d. $\frac{300ft}{2.92s} \cdot \frac{1mi}{5280ft} \cdot \frac{60s}{1min} \cdot \frac{1hr}{60min}$



10. How many minutes are in 1.4 days? Use conversion factors to determine the answer. Show your work.



11. How many millimeters are in 3 feet? Use conversion factors to determine the answer. Show your work.



12. How many kilometers is 157 feet? Use conversion factors to determine the answer. Show your work.



13. An emu can run 31 miles per hour. What is the emu's speed in feet per second? Use conversion factors to determine the answer. Show your work.



14. A tortoise can travel 10 cm per second. What is the tortoise's speed in feet per hour? Use conversion factors to determine the answer. Show your work.



15. If you can walk 55 meters in 2 minutes, what is your rate in miles per hour? Use conversion factors to determine the answer. Show your work.



16. An 18,000 gallon pool takes approximately 40 hours to fill. What is this rate in pints per minute? Use conversion factors to determine the answer. Show your work.



17. A tub can drain 24 gallons of water in 5 minutes. What is this rate in cups per second? Use conversion factors to determine the answer. Show your work.



18. A skydiver free falls at the rate of 120 miles per hour. What is the skydiver's speed in kilometers per minute? Use conversion factors to determine the answer. Show your work.



19. If the average baseball fast pitch is 92 miles per hour, what is that rate in feet per second? Use conversion factors to determine the answer. Show your work.



20. Challenge

A child takes 7 ml of medicine a day. How many days would a pint of this medicine last? Use conversion factors to determine the answer. Show your work.



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b. $\frac{1\text{gal}}{\$3.54} \cdot \frac{\$1.00}{100\text{cents}} \cdot \frac{4\text{qrts}}{1\text{gal}} \cdot \frac{1\text{qrt}}{2\text{pints}}$

c. $\frac{1\text{gal}}{\$3.54} \cdot \frac{100\text{cents}}{\$1.00} \cdot \frac{4\text{qrts}}{1\text{gal}} \cdot \frac{1\text{qrt}}{2\text{pints}}$

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b. $\frac{300\text{ft}}{2.92\text{s}} \cdot \frac{5280\text{ft}}{1\text{mi}} \cdot \frac{60\text{s}}{1\text{min}} \cdot \frac{60\text{min}}{1\text{hr}}$

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KEY

1) B

2) B

3) C

4) B

5) A

6) C

7) A

8) C

9) A

10) 2016 minutes

11) 914.4 mm

12) 0.0478 km

13) 45.47 feet/sec

14) 1181.1 feet/hr

15) 1.025 miles/hr

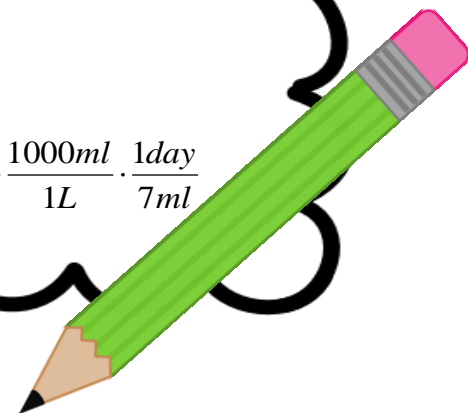
16) 60 pints/min

17) 1.28 cups/sec

18) 3.22 km/min

19) 134.93 feet/sec

20) 67.6 days $\frac{1pt}{1} \cdot \frac{0.472L}{1pt} \cdot \frac{1000ml}{1L} \cdot \frac{1day}{7ml}$



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